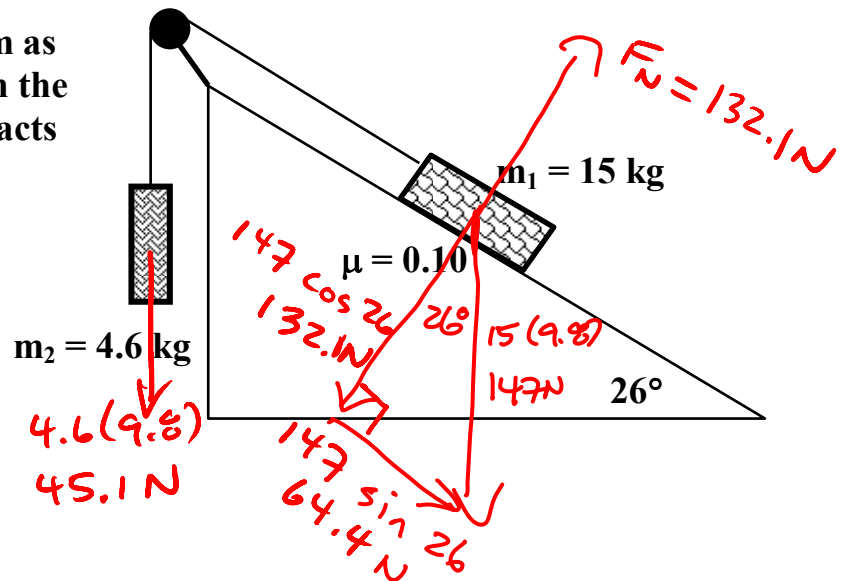


Example #18. Similar problem as #17, but with friction acting on the 15 kg mass. Note that friction acts in the *opposite* direction to the largest force. Find the acceleration by first determining the direction of motion.



→ by inspection of the calculations above, friction will act upslope, because $64.4 > 45.1$

$$\rightarrow F_f = \mu F_N = 0.10(132.1) = 13.2 \text{ N}$$

→ F.b.d of the system:



$$F_{\text{net}} = 64.4 - (45.1 + 13.2) = 6.1 \text{ N}$$

$$F_{\text{net}} = m_{\text{tot}} a \quad 6.1 = 19.6 a$$

$$a = 0.31 \text{ m/s}^2$$

